

ABSTRACT OF THE DISCLOSURE

Disclosed is a method and apparatus for regenerating an oxygen-binding ability by reducing the methemoglobin contained in hemoglobin-vesicle by light 5 irradiation. This method comprises adding electron donors such as amino acids, saccharides, alcohols, and/or flavin derivatives in appropriate amounts to the inner aqueous phase of the hemoglobin-vesicle, applying light to the vesicle when the content of methemoglobin 10 increases as a result of oxidation of hemoglobin, thereby reducing the metohemoglobin. In this manner, the oxygen-binding ability is recovered, thereby maintaining the function of the hemoglobin-vesicle.

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